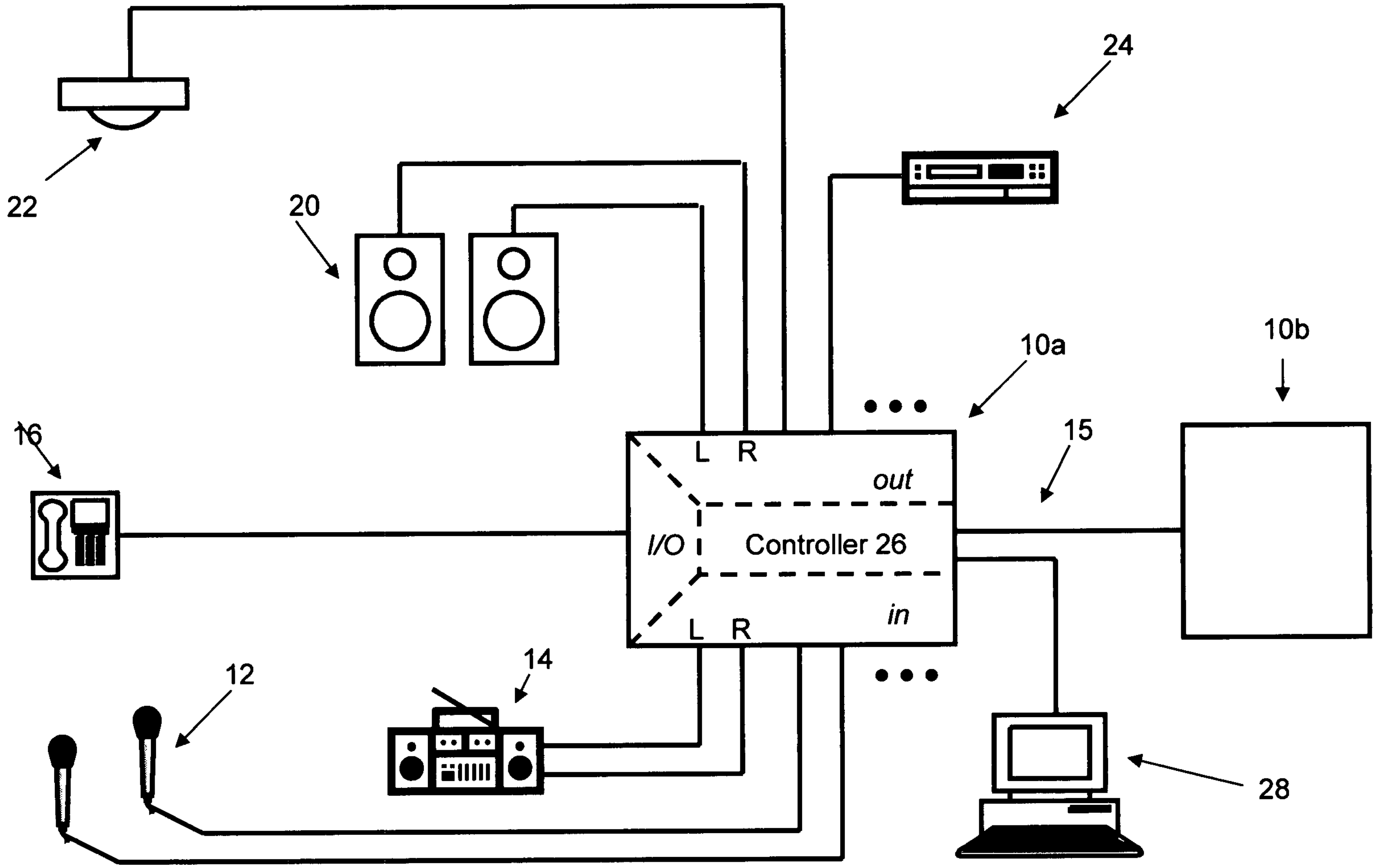


Figure 1 (Prior Art)

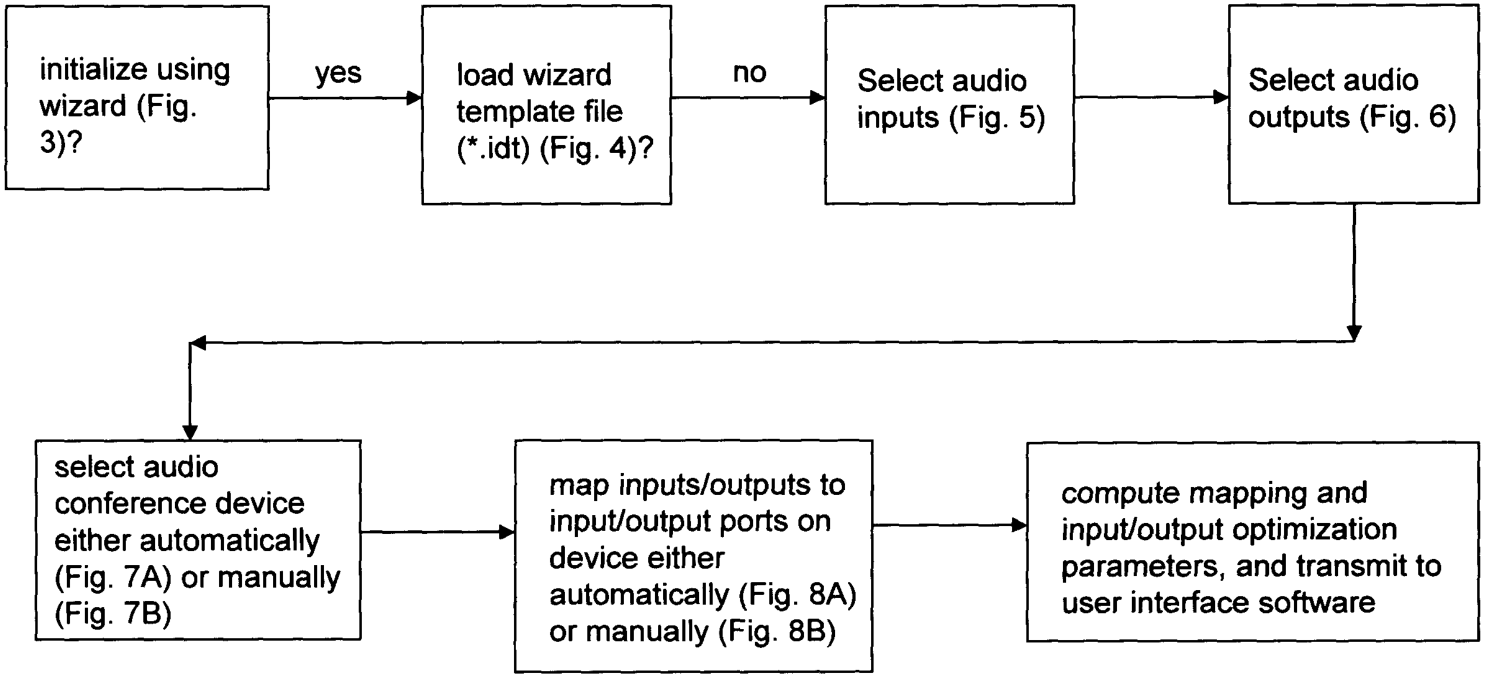
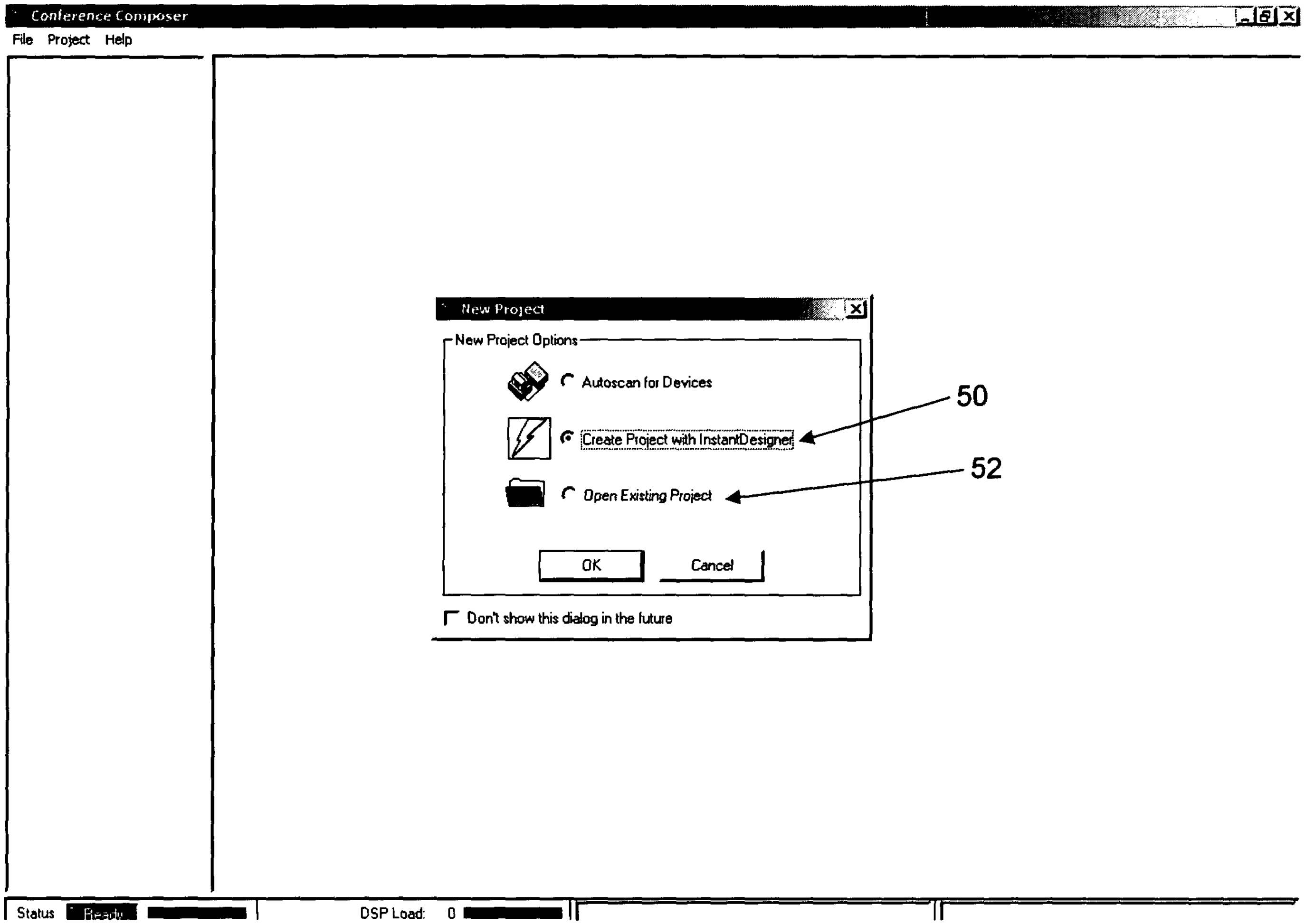

initialize using wizard (Fig. 3)?
yes
load wizard template file (*.idt) (Fig. 4)?
no
Select audio inputs (Fig. 5)
Select audio outputs (Fig. 6)
select audio conference device either automatically (Fig. 7A) or manually (Fig. 7B)
map inputs/outputs to input/output ports on device either automatically (Fig. 8A) or manually (Fig. 8B)
compute mapping and input/output optimization parameters, and transmit to user interface software

Figure 2



New Project Options

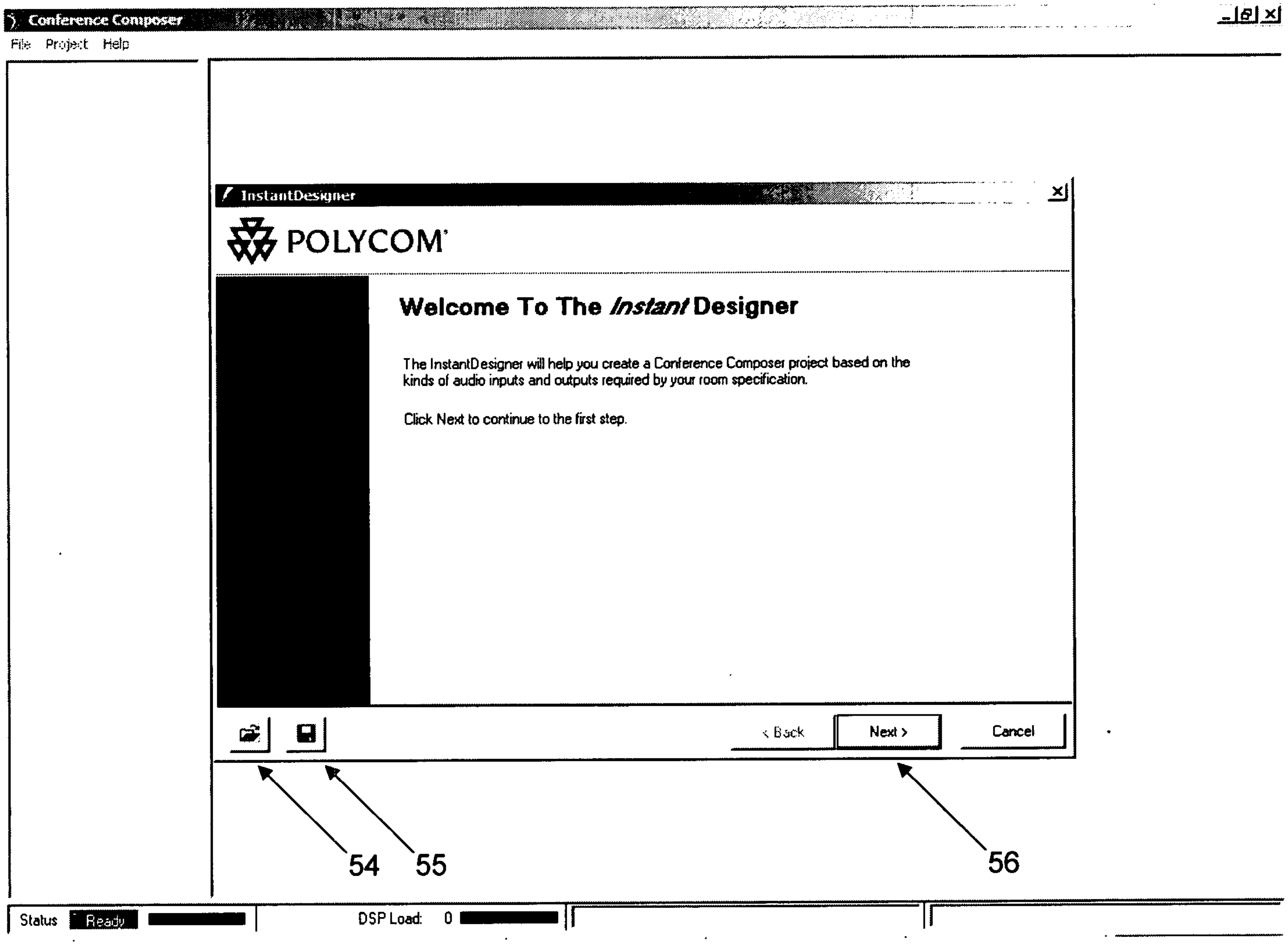
○ Autoscan for Devices

● Create Project with InstantDesigner

○ Open Existing Project

☐ Don't show this dialog in the future

Figure 3

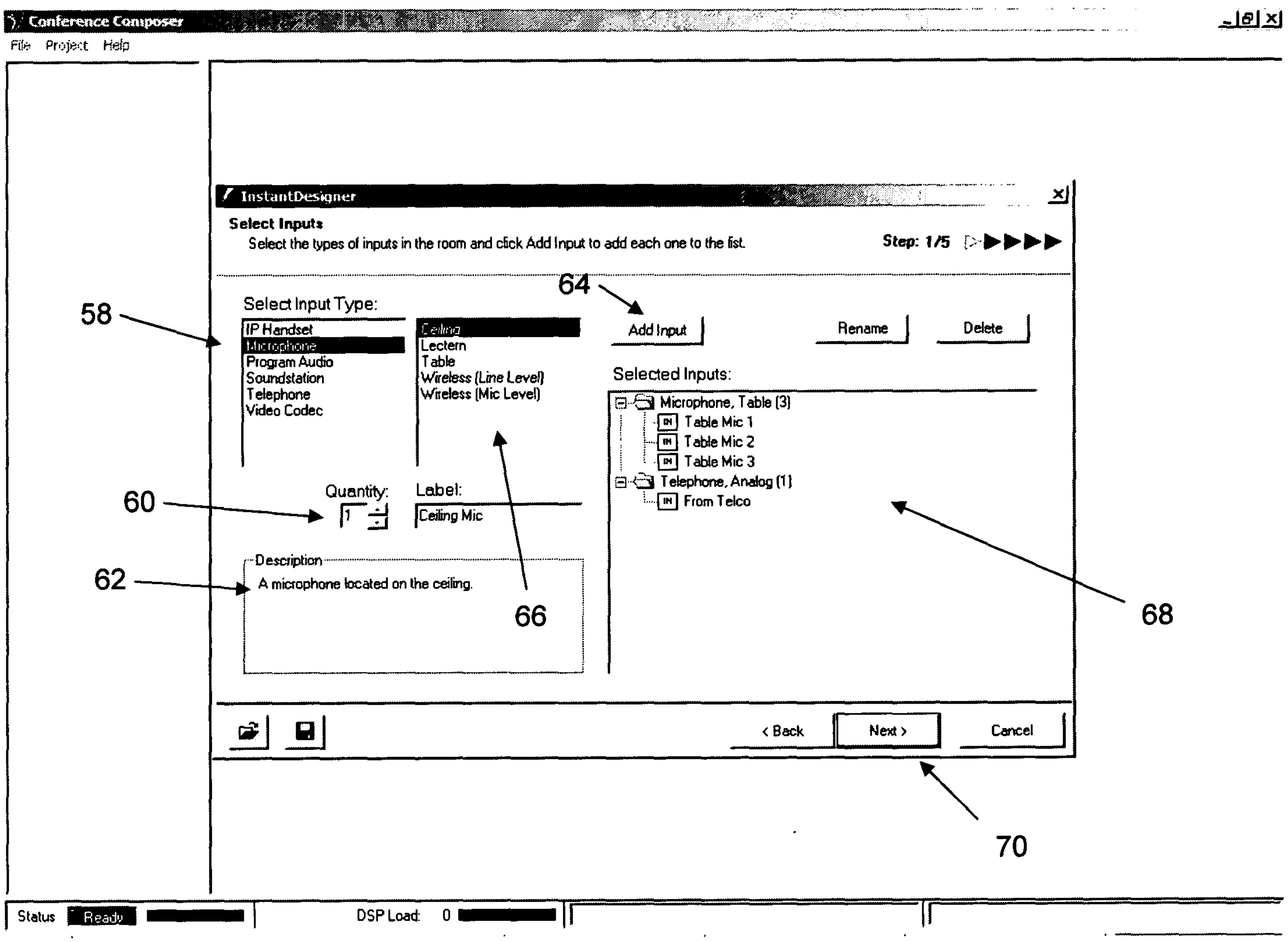


Welcome To The *Instant* Designer

The InstantDesigner will help you create a Conference Composer project based on the kinds of audio inputs and outputs required by your room specification.

Click Next to continue to the first step.

Figure 4



Select Inputs

Select the types of inputs in the room and click Add Input to add each one to the list.

Select Input Type:

- IP Handset
- Microphone
- Program Audio
- Soundstation
- Telephone
- Video Codec

- Ceiling
- Lectern
- Table
- Wireless (Line Level)
- Wireless (Mic Level)

Quantity: 1

Label: Ceiling Mic

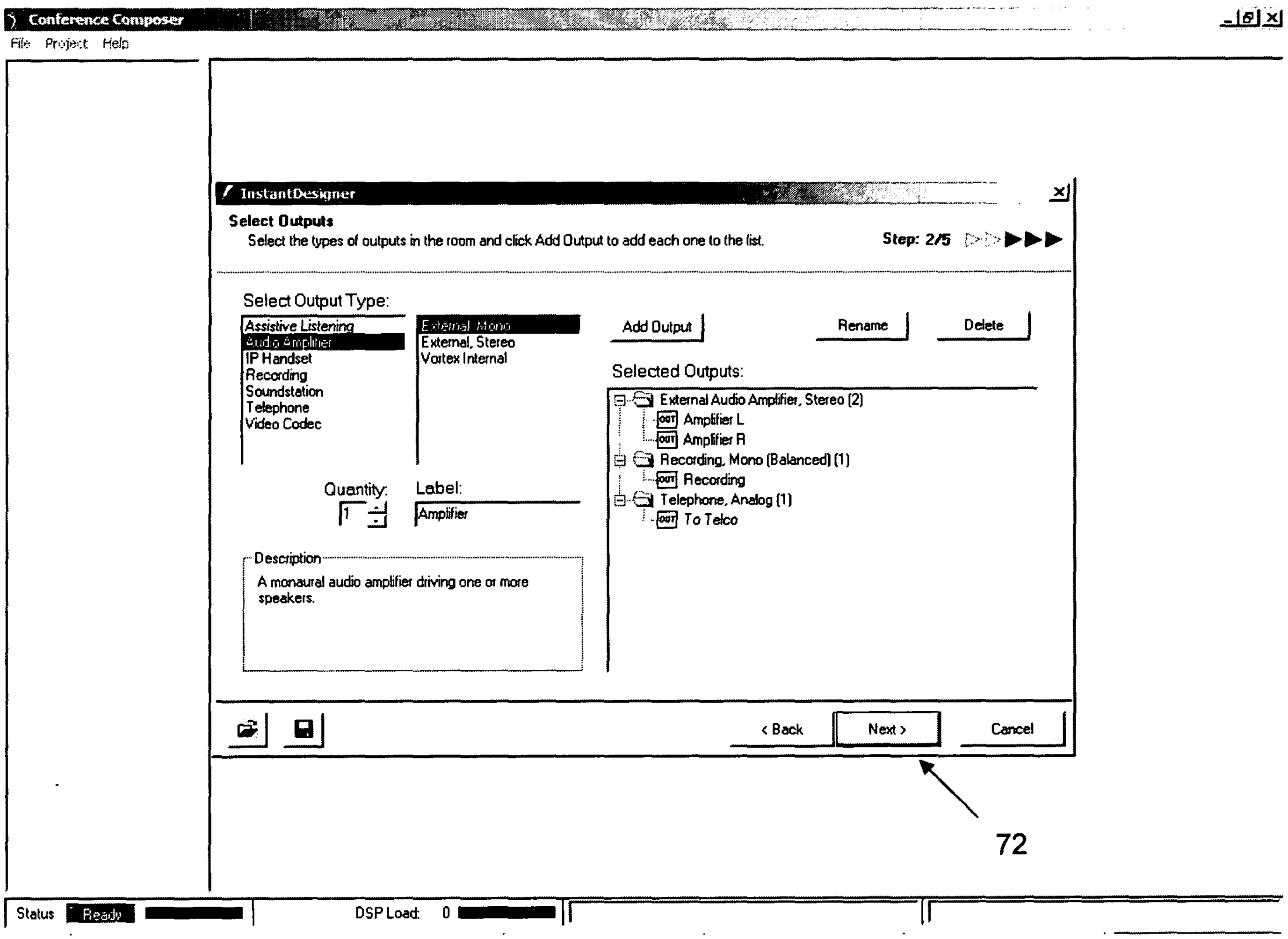
Description

A microphone located on the ceiling.

Selected Inputs:

- Microphone, Table (3)
  - Table Mic 1
  - Table Mic 2
  - Table Mic 3
- Telephone, Analog (1)
  - From Telco

Figure 5



Select Outputs
Select the types of outputs in the room and click Add Output to add each one to the list.

Step: 2/5

Select Output Type:
- Assistive Listening
- Audio Amplifier
- IP Handset
- Recording
- Soundstation
- Telephone
- Video Codec

- External, Mono
- External, Stereo
- Vortex Internal

Quantity: 1

Label: Amplifier

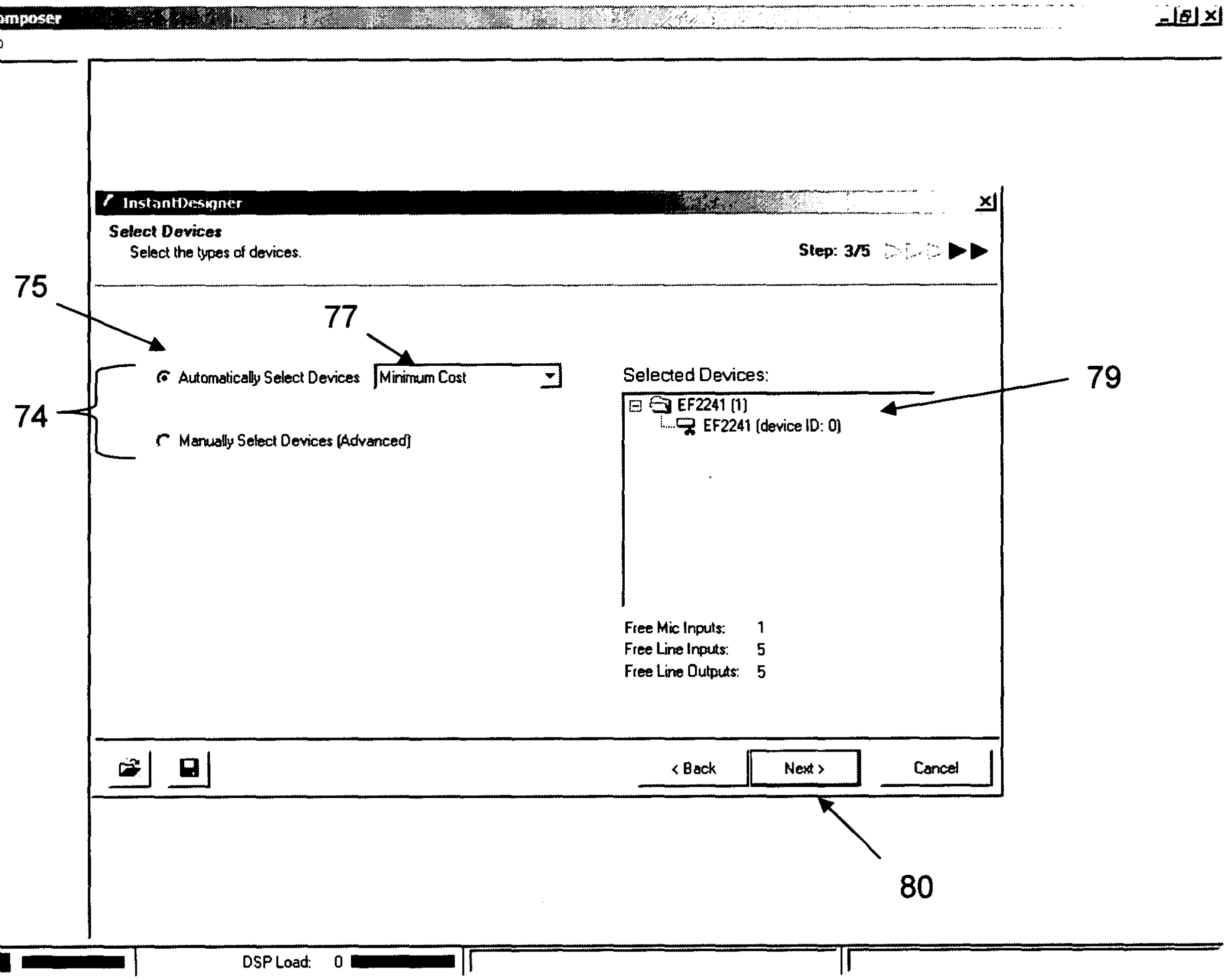
Description
A monaural audio amplifier driving one or more speakers.

Selected Outputs:
- External Audio Amplifier, Stereo (2)
  - OUT Amplifier L
  - OUT Amplifier R
- Recording, Mono (Balanced) (1)
  - OUT Recording
- Telephone, Analog (1)
  - OUT To Telco

Status Ready

DSP Load: 0

Figure 6



Select Devices
Select the types of devices.

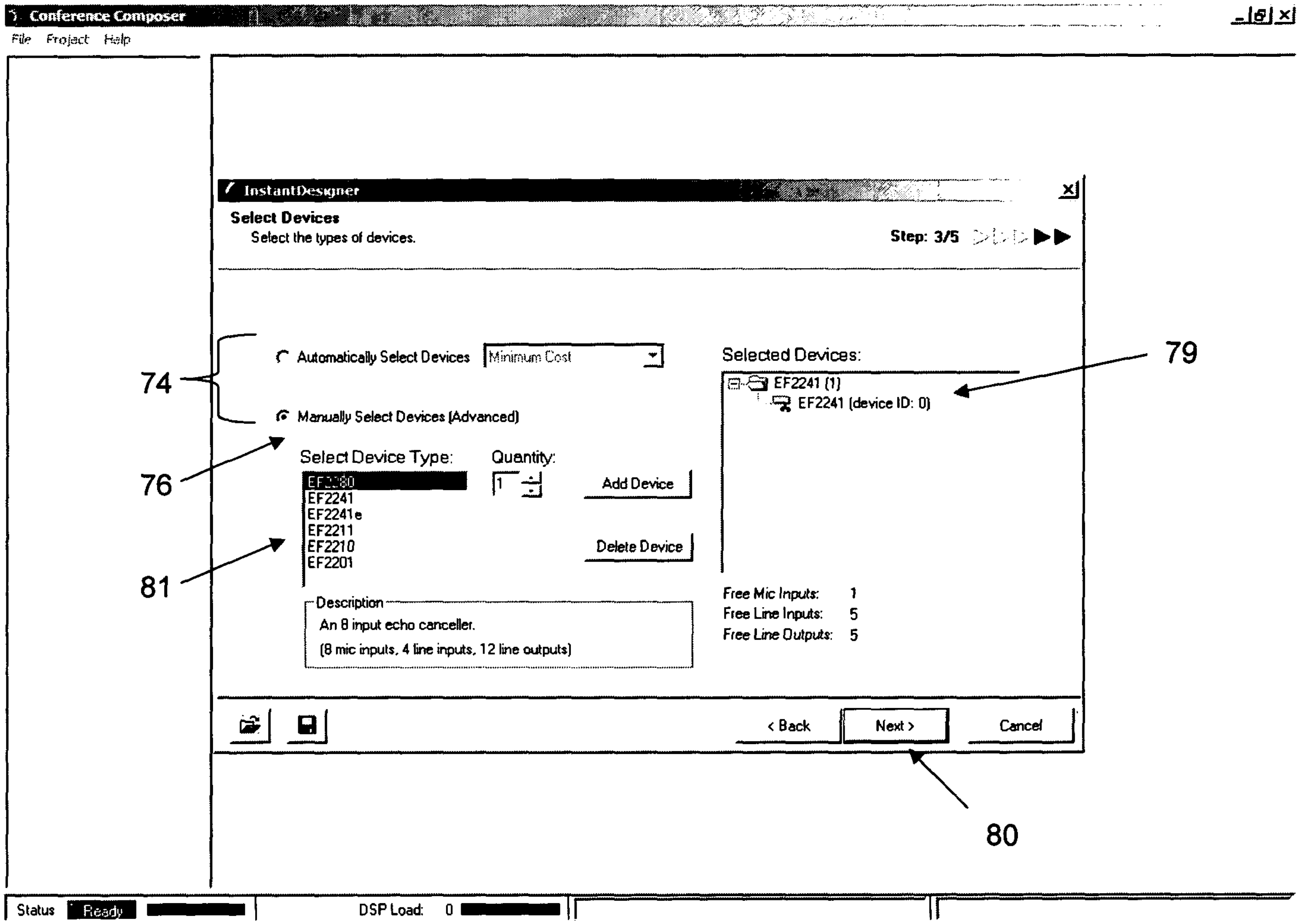
Step: 3/5

◉ Automatically Select Devices: Minimum Cost
○ Manually Select Devices (Advanced)

Selected Devices:
- EF2241 (1)
  - EF2241 (device ID: 0)

Free Mic Inputs: 1
Free Line Inputs: 5
Free Line Outputs: 5

Figure 7A



Select Devices
Select the types of devices.

Step: 3/5

○ Automatically Select Devices: Minimum Cost
● Manually Select Devices (Advanced)

Select Device Type:
EF2280
EF2241
EF2241e
EF2211
EF2210
EF2201

Quantity: 1

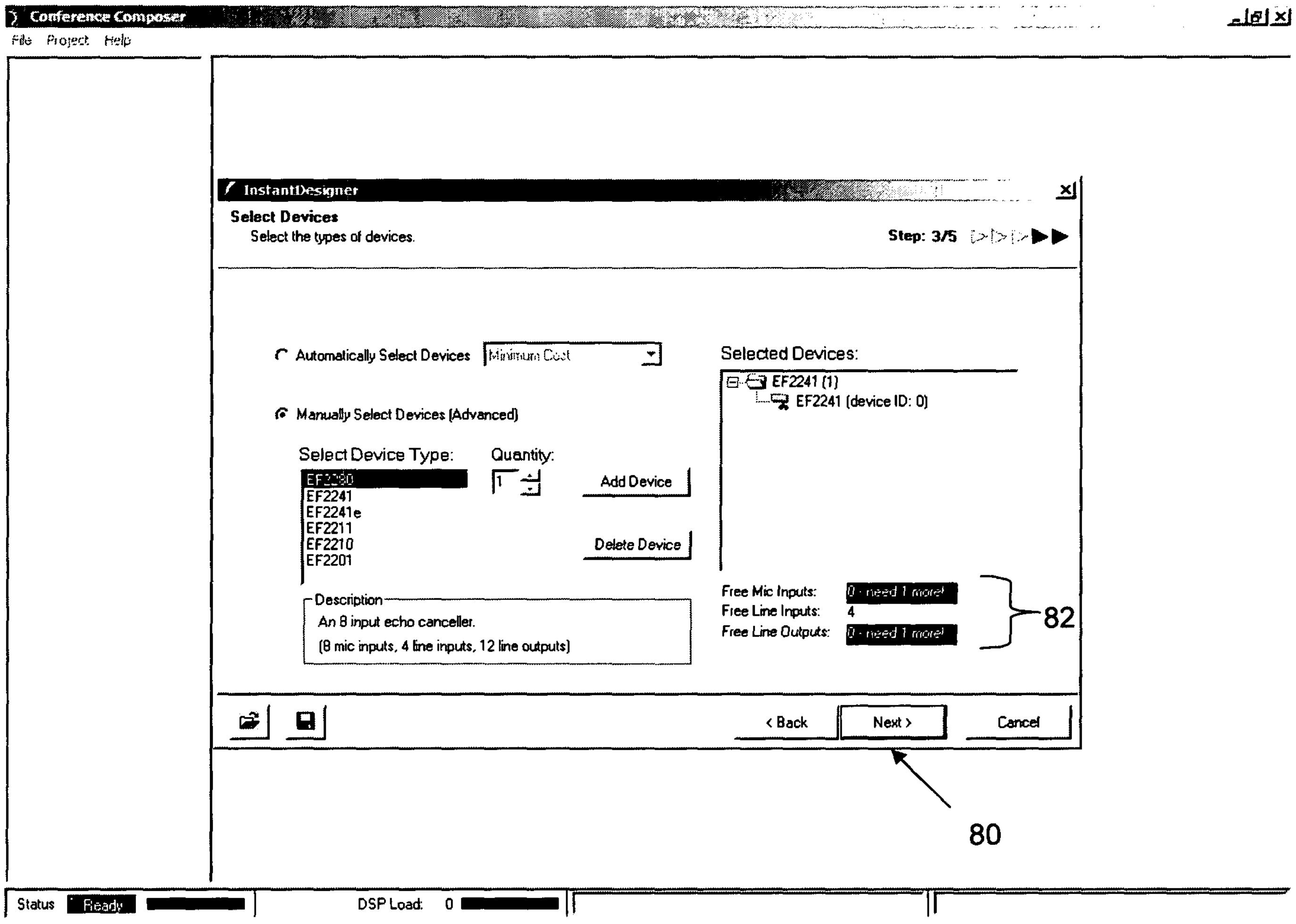
Description
An 8 input echo canceller.
(8 mic inputs, 4 line inputs, 12 line outputs)

Selected Devices:
EF2241 (1)
EF2241 (device ID: 0)

Free Mic Inputs: 1
Free Line Inputs: 5
Free Line Outputs: 5

Status: Ready
DSP Load: 0

Figure 7B



Select Devices
Select the types of devices.

○ Automatically Select Devices: Minimum Cost

● Manually Select Devices (Advanced)

Select Device Type:
- EF2280
- EF2241
- EF2241e
- EF2211
- EF2210
- EF2201

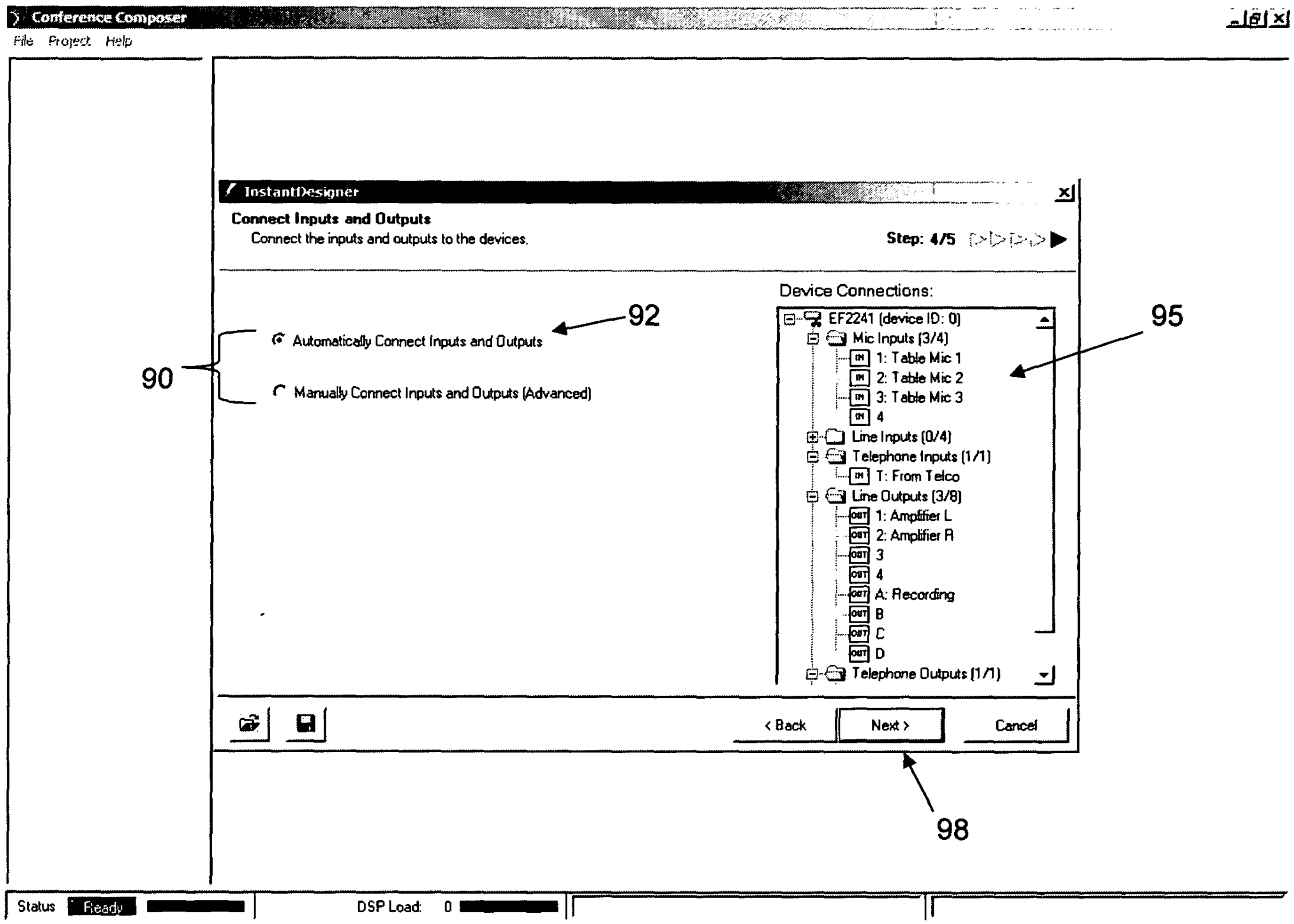
Quantity: 1

Description
An 8 input echo canceller.
(8 mic inputs, 4 line inputs, 12 line outputs)

Selected Devices:
- EF2241 (1)
  - EF2241 (device ID: 0)

Free Mic Inputs: 0 - need 1 more!
Free Line Inputs: 4
Free Line Outputs: 0 - need 1 more!

Figure 7C



Conference Composer

InstantDesigner

Connect Inputs and Outputs

Connect the inputs and outputs to the devices.

Step: 4/5

● Automatically Connect Inputs and Outputs

○ Manually Connect Inputs and Outputs (Advanced)

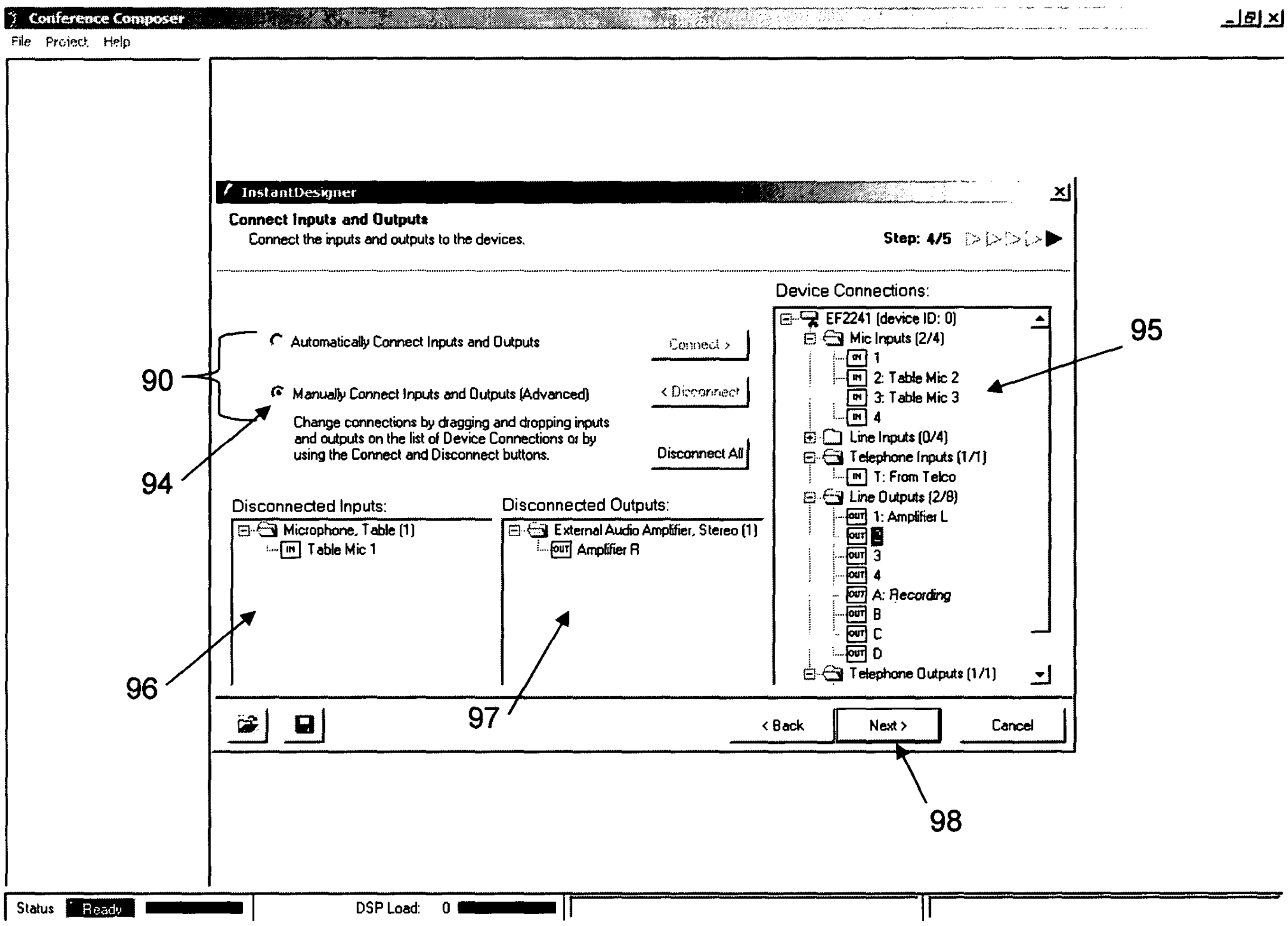
Device Connections:

- EF2241 (device ID: 0)
  - Mic Inputs (3/4)
    - IN 1: Table Mic 1
    - IN 2: Table Mic 2
    - IN 3: Table Mic 3
    - IN 4
  - Line Inputs (0/4)
  - Telephone Inputs (1/1)
    - IN T: From Telco
  - Line Outputs (3/8)
    - OUT 1: Amplifier L
    - OUT 2: Amplifier R
    - OUT 3
    - OUT 4
    - OUT A: Recording
    - OUT B
    - OUT C
    - OUT D
  - Telephone Outputs (1/1)

Status Ready

DSP Load: 0

Figure 8A



Connect Inputs and Outputs
Connect the inputs and outputs to the devices.

Step: 4/5

○ Automatically Connect Inputs and Outputs

● Manually Connect Inputs and Outputs (Advanced)

Change connections by dragging and dropping inputs and outputs on the list of Device Connections or by using the Connect and Disconnect buttons.

Disconnected Inputs:

- Microphone, Table (1)
  - IN Table Mic 1

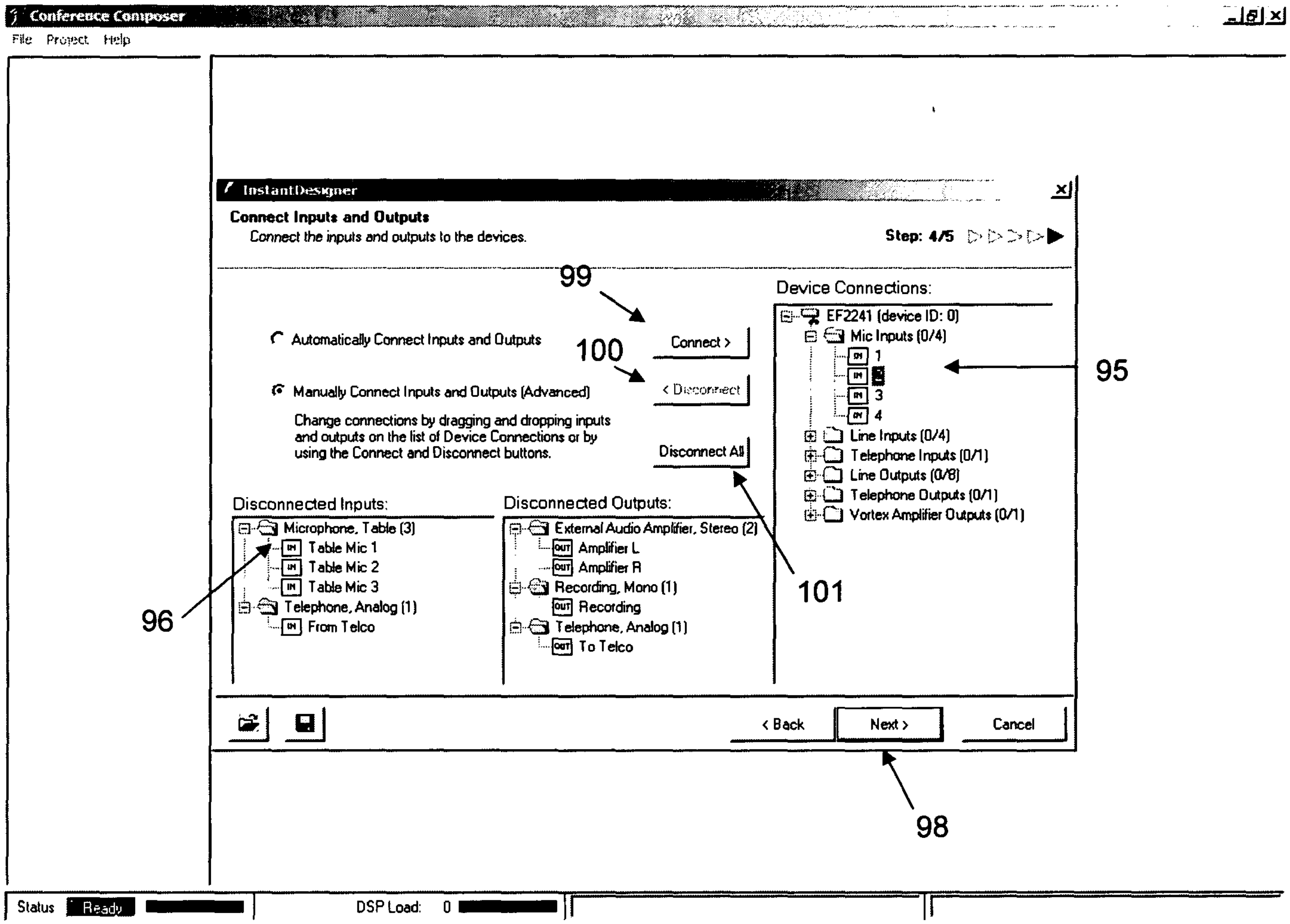
Disconnected Outputs:

- External Audio Amplifier, Stereo (1)
  - OUT Amplifier R

Device Connections:

- EF2241 (device ID: 0)
  - Mic Inputs (2/4)
    - IN 1
    - IN 2: Table Mic 2
    - IN 3: Table Mic 3
    - IN 4
  - Line Inputs (0/4)
  - Telephone Inputs (1/1)
    - IN T: From Telco
  - Line Outputs (2/8)
    - OUT 1: Amplifier L
    - OUT 2
    - OUT 3
    - OUT 4
    - OUT A: Recording
    - OUT B
    - OUT C
    - OUT D
  - Telephone Outputs (1/1)

Figure 8B



Connect Inputs and Outputs
Connect the inputs and outputs to the devices.

○ Automatically Connect Inputs and Outputs

● Manually Connect Inputs and Outputs (Advanced)

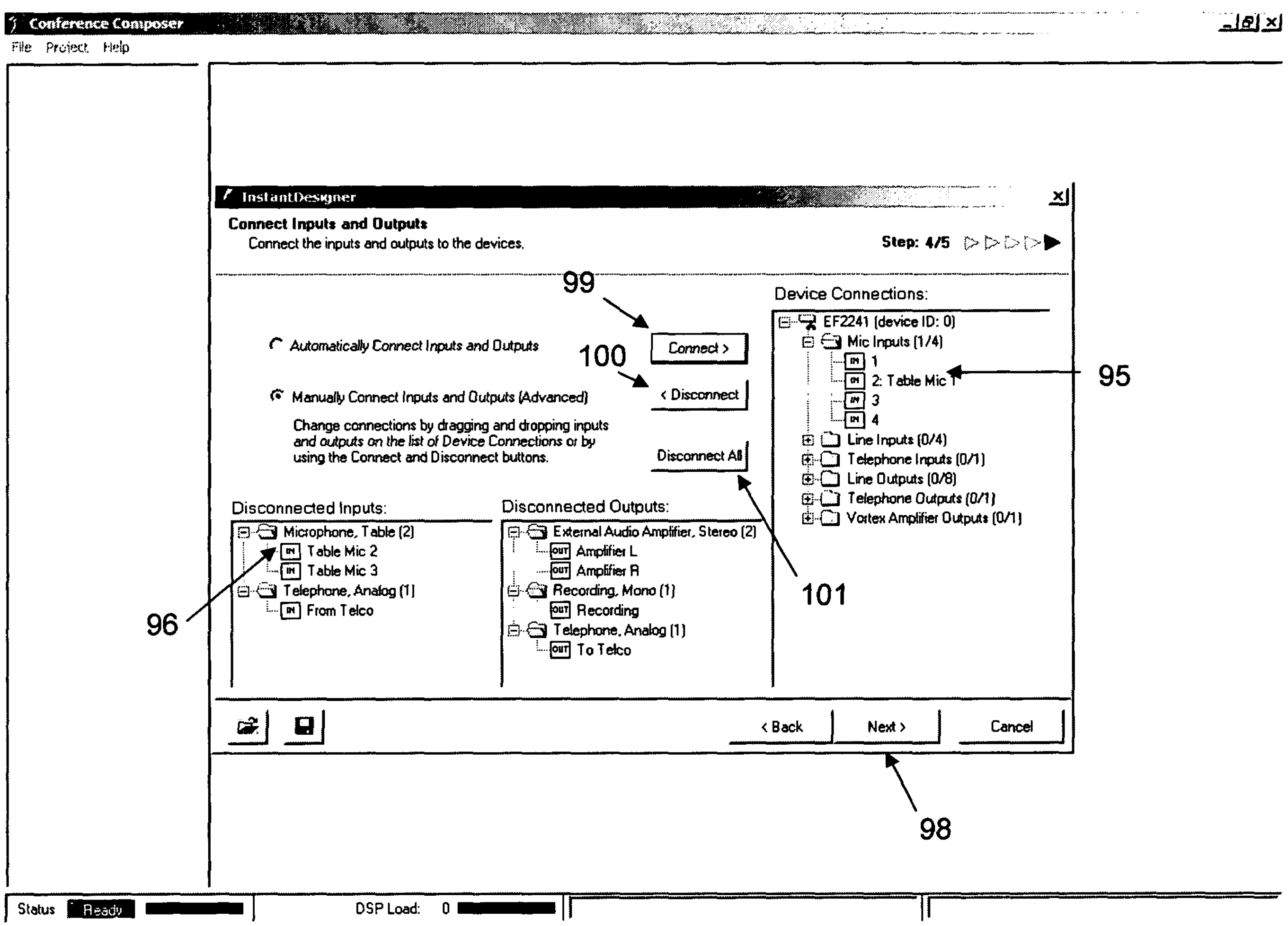
Change connections by dragging and dropping inputs and outputs on the list of Device Connections or by using the Connect and Disconnect buttons.

Disconnected Inputs:
- Microphone, Table (3)
  - Table Mic 1
  - Table Mic 2
  - Table Mic 3
- Telephone, Analog (1)
  - From Telco

Disconnected Outputs:
- External Audio Amplifier, Stereo (2)
  - Amplifier L
  - Amplifier R
- Recording, Mono (1)
  - Recording
- Telephone, Analog (1)
  - To Telco

Device Connections:
- EF2241 (device ID: 0)
  - Mic Inputs (0/4)
    - 1
    -
    - 3
    - 4
  - Line Inputs (0/4)
  - Telephone Inputs (0/1)
  - Line Outputs (0/8)
  - Telephone Outputs (0/1)
  - Vortex Amplifier Outputs (0/1)

Figure 8C



Connect Inputs and Outputs

Connect the inputs and outputs to the devices.

Step: 4/5

○ Automatically Connect Inputs and Outputs

● Manually Connect Inputs and Outputs (Advanced)

Change connections by dragging and dropping inputs and outputs on the list of Device Connections or by using the Connect and Disconnect buttons.

Disconnected Inputs:

- Microphone, Table (2)
  - Table Mic 2
  - Table Mic 3
- Telephone, Analog (1)
  - From Telco

Disconnected Outputs:

- External Audio Amplifier, Stereo (2)
  - Amplifier L
  - Amplifier R
- Recording, Mono (1)
  - Recording
- Telephone, Analog (1)
  - To Telco

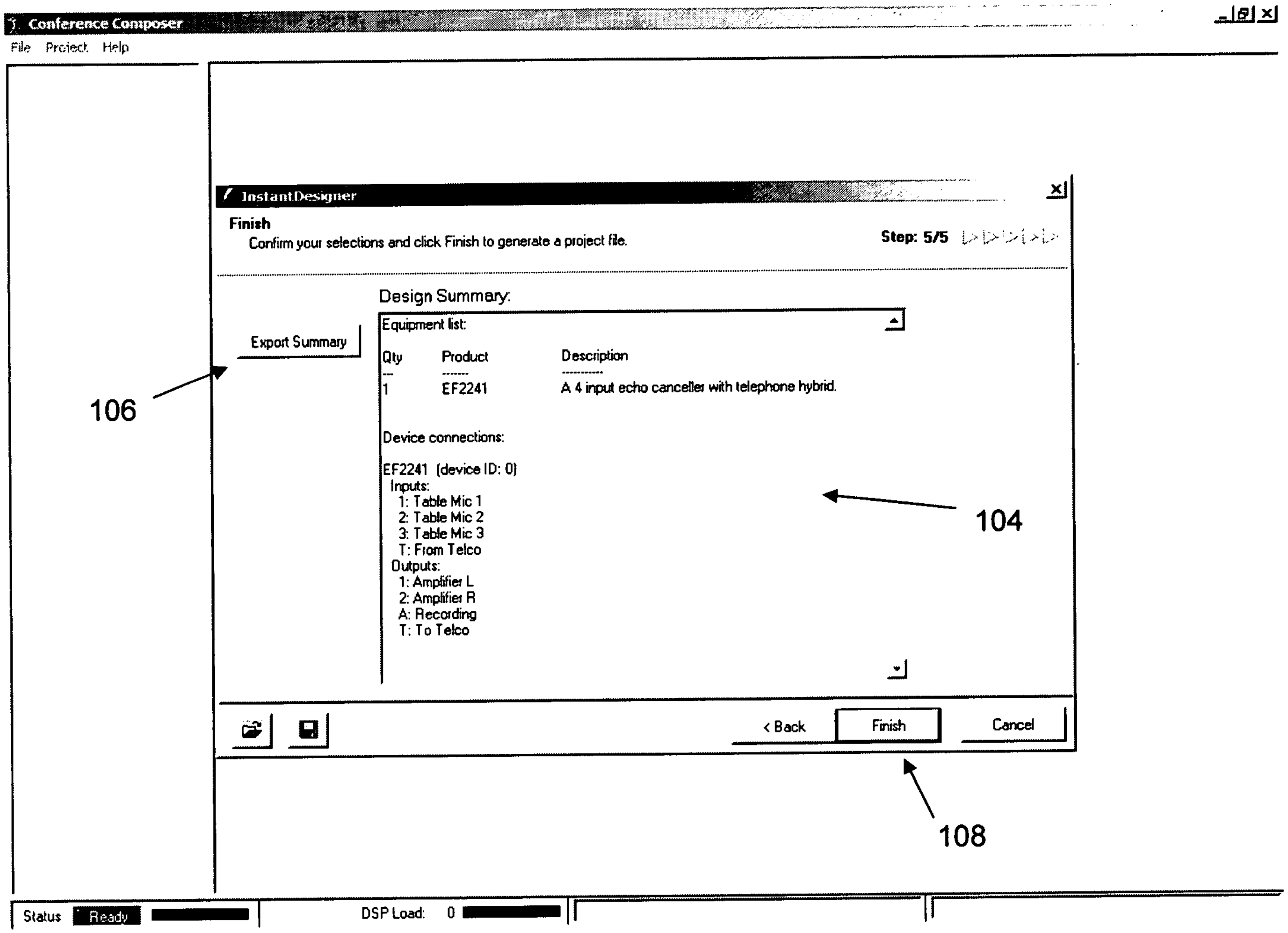
Device Connections:

- EF2241 (device ID: 0)
  - Mic Inputs (1/4)
    - 1
    - 2: Table Mic 1
    - 3
    - 4
  - Line Inputs (0/4)
  - Telephone Inputs (0/1)
  - Line Outputs (0/8)
  - Telephone Outputs (0/1)
  - Vortex Amplifier Outputs (0/1)

Status: Ready

DSP Load: 0

Figure 8D



Finish

Confirm your selections and click Finish to generate a project file.

Step: 5/5

Design Summary:

```
Equipment list:

Qty    Product    Description
---    -------    -----------
1      EF2241     A 4 input echo canceller with telephone hybrid.


Device connections:

EF2241  (device ID: 0)
 Inputs:
  1: Table Mic 1
  2: Table Mic 2
  3: Table Mic 3
  T: From Telco
 Outputs:
  1: Amplifier L
  2: Amplifier R
  A: Recording
  T: To Telco
```

Figure 9

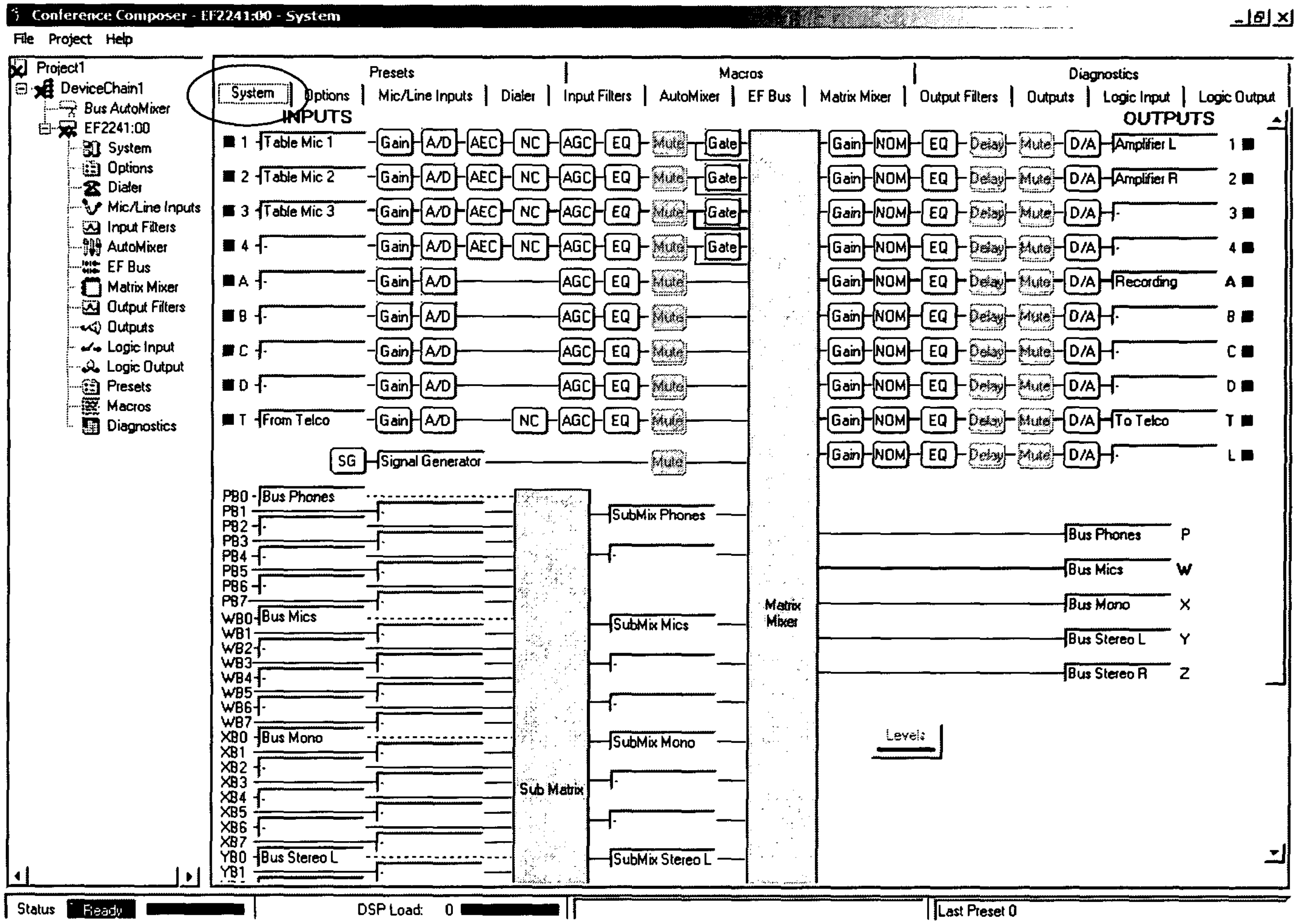

Conference Composer - EF2241:00 - System
File
Project
Help
Project1
DeviceChain1
Bus AutoMixer
EF2241:00
System
Options
Dialer
Mic/Line Inputs
Input Filters
AutoMixer
EF Bus
Matrix Mixer
Output Filters
Outputs
Logic Input
Logic Output
Presets
Macros
Diagnostics
Presets
Macros
Diagnostics
System
Options
Mic/Line Inputs
Dialer
Input Filters
AutoMixer
EF Bus
Matrix Mixer
Output Filters
Outputs
Logic Input
Logic Output
INPUTS
OUTPUTS
1 Table Mic 1
2 Table Mic 2
3 Table Mic 3
4
A
B
C
D
T From Telco
Gain
A/D
AEC
NC
AGC
EQ
Mute
Gate
SG
Signal Generator
PB0 Bus Phones
PB1
PB2
PB3
PB4
PB5
PB6
PB7
WB0 Bus Mics
WB1
WB2
WB3
WB4
WB5
WB6
WB7
XB0 Bus Mono
XB1
XB2
XB3
XB4
XB5
XB6
XB7
YB0 Bus Stereo L
YB1
Sub Matrix
SubMix Phones
SubMix Mics
SubMix Mono
SubMix Stereo L
Matrix Mixer
Gain
NOM
EQ
Delay
Mute
D/A
Amplifier L 1
Amplifier R 2
3
4
Recording A
B
C
D
To Telco T
L
Bus Phones P
Bus Mics W
Bus Mono X
Bus Stereo L Y
Bus Stereo R Z
Levels
Status Ready
DSP Load: 0
Last Preset 0

Figure 10A

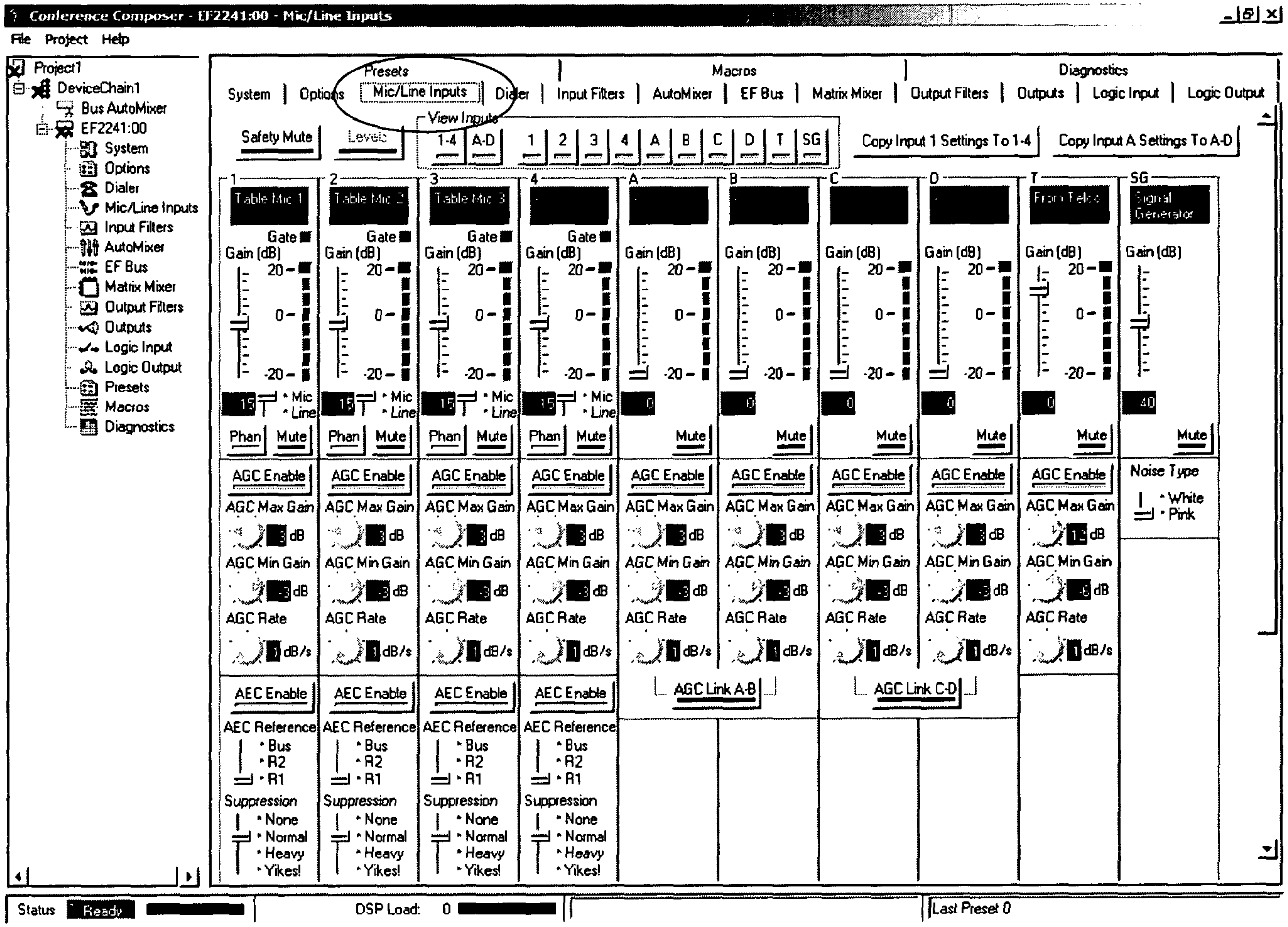
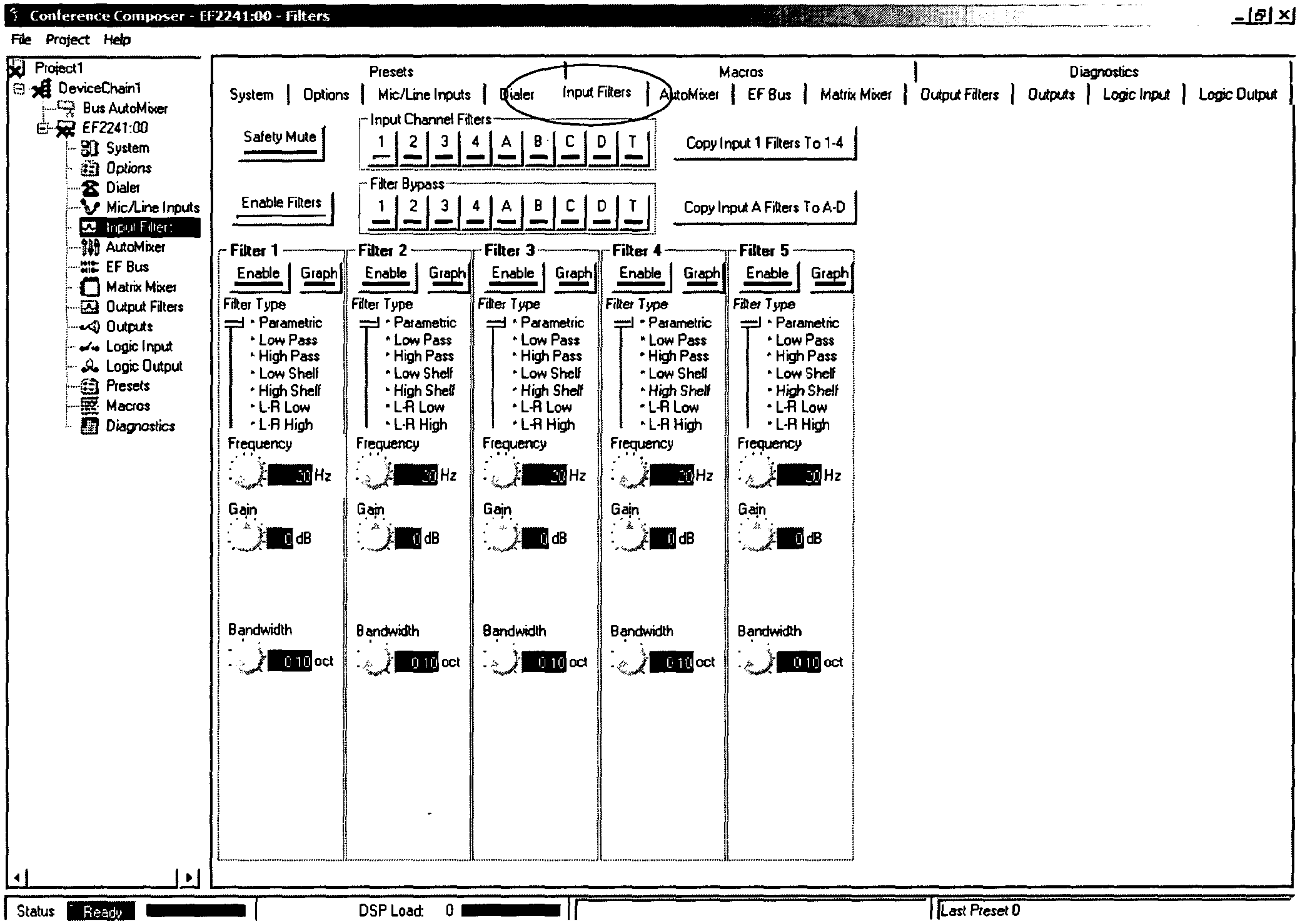

Conference Composer - EF2241:00 - Mic/Line Inputs
File
Project
Help
Project1
DeviceChain1
Bus AutoMixer
EF2241:00
System
Options
Dialer
Mic/Line Inputs
Input Filters
AutoMixer
EF Bus
Matrix Mixer
Output Filters
Outputs
Logic Input
Logic Output
Presets
Macros
Diagnostics
Presets
Macros
Diagnostics
System
Options
Mic/Line Inputs
Dialer
Input Filters
AutoMixer
EF Bus
Matrix Mixer
Output Filters
Outputs
Logic Input
Logic Output
Safety Mute
Levels
View Inputs
1-4
A-D
1
2
3
4
A
B
C
D
T
SG
Copy Input 1 Settings To 1-4
Copy Input A Settings To A-D
1
Table Mic 1
2
Table Mic 2
3
Table Mic 3
4
A
B
C
D
T
From Telco
SG
Signal Generator
Gate
Gain (dB)
20
0
-20
15
0
40
Mic
Line
Phan
Mute
AGC Enable
AGC Max Gain
dB
AGC Min Gain
AGC Rate
dB/s
AGC Link A-B
AGC Link C-D
Noise Type
White
Pink
AEC Enable
AEC Reference
Bus
R2
R1
Suppression
None
Normal
Heavy
Yikes!
Status
Ready
DSP Load:
0
Last Preset 0

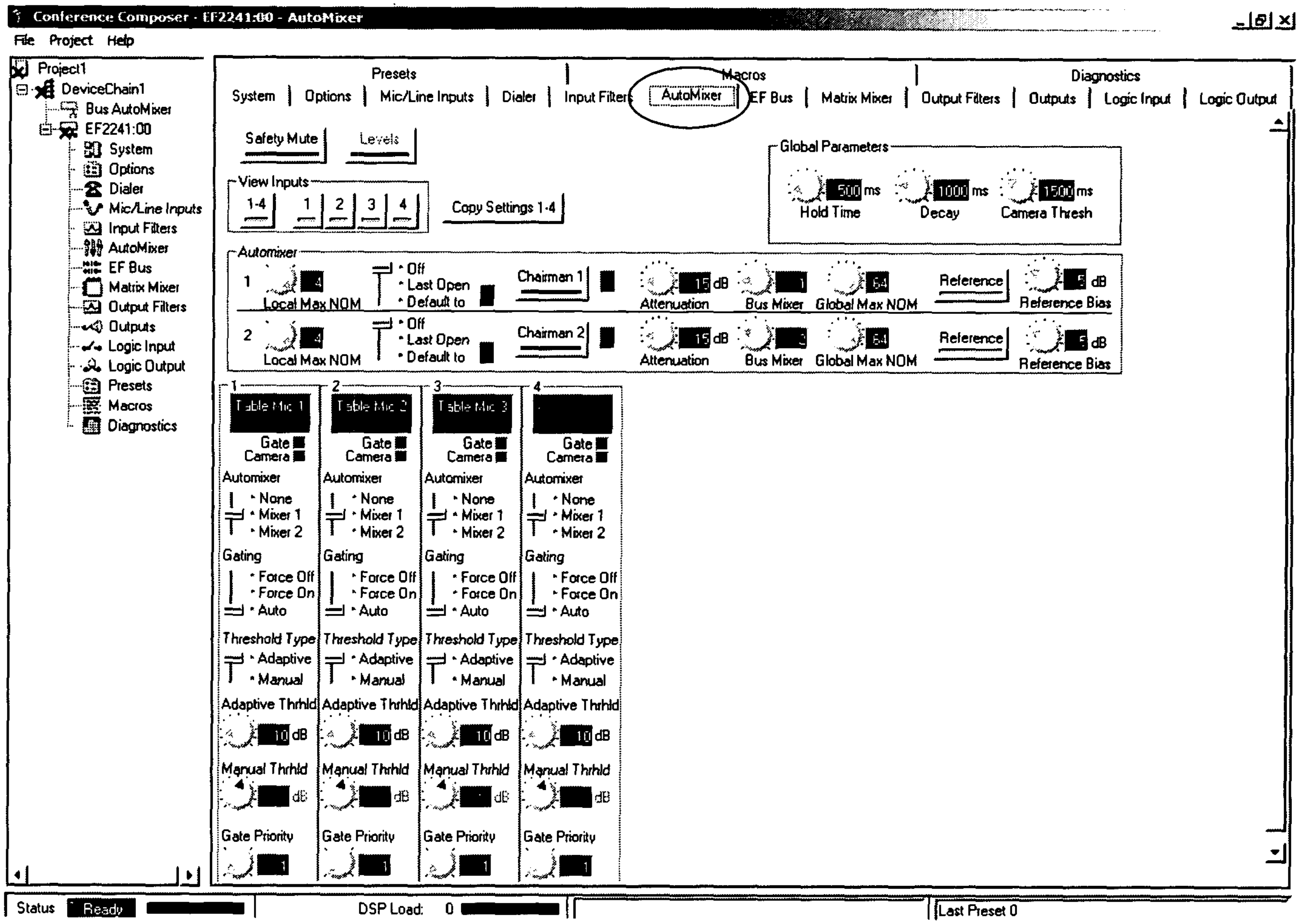
Figure 10B



Filter 1–5: Frequency 30 Hz; Gain 0 dB; Bandwidth 0.10 oct

DSP Load: 0

Figure 10C



Global Parameters: Hold Time 500 ms, Decay 1000 ms, Camera Thresh 1500 ms

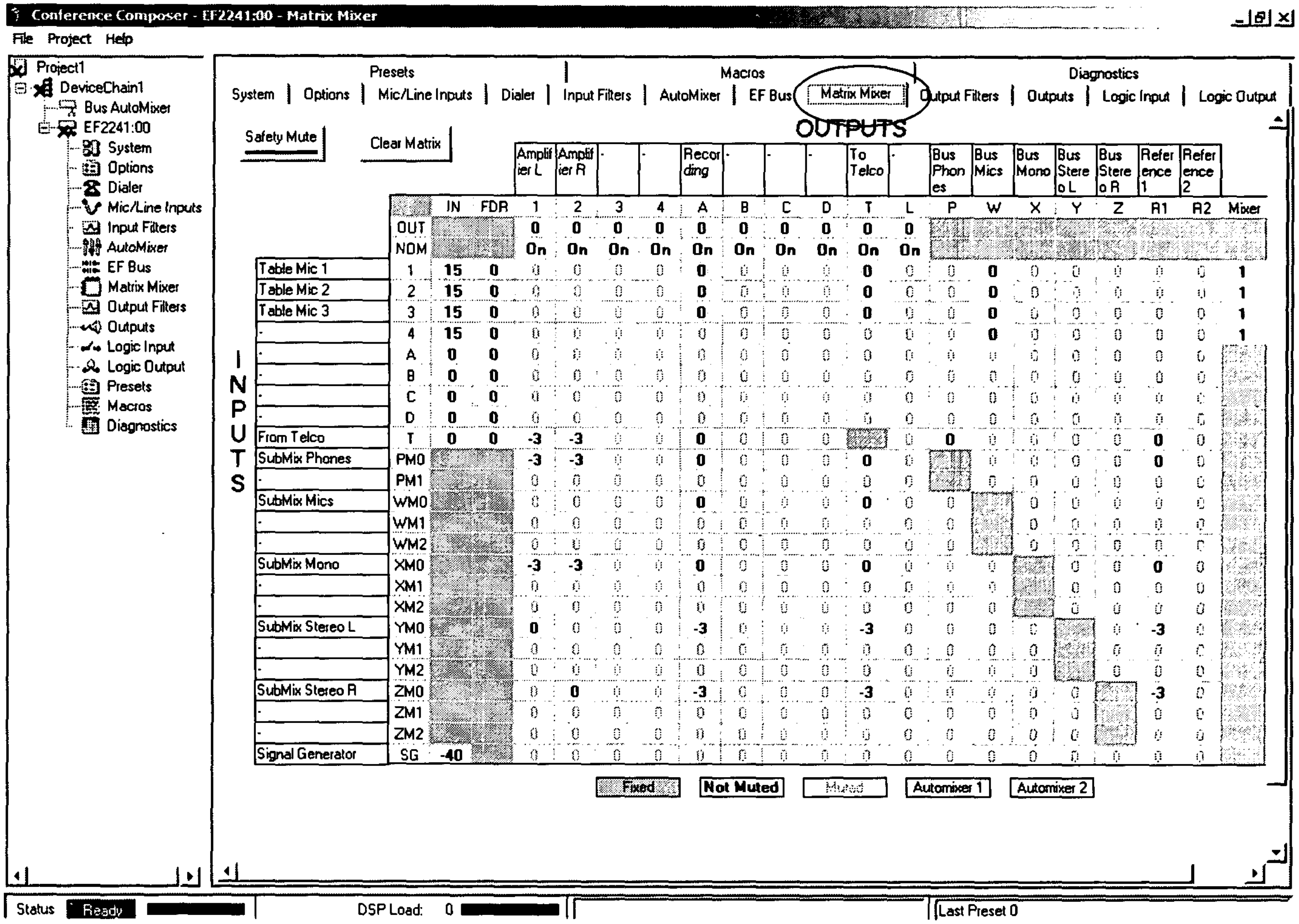
Automixer 1: Local Max NOM 4, Attenuation 15 dB, Bus Mixer 1, Global Max NOM 64, Reference Bias 5 dB

Automixer 2: Local Max NOM 4, Attenuation 15 dB, Bus Mixer 3, Global Max NOM 64, Reference Bias 5 dB

Inputs 1–4: Adaptive Thrhld 10 dB, Manual Thrhld dB, Gate Priority 1

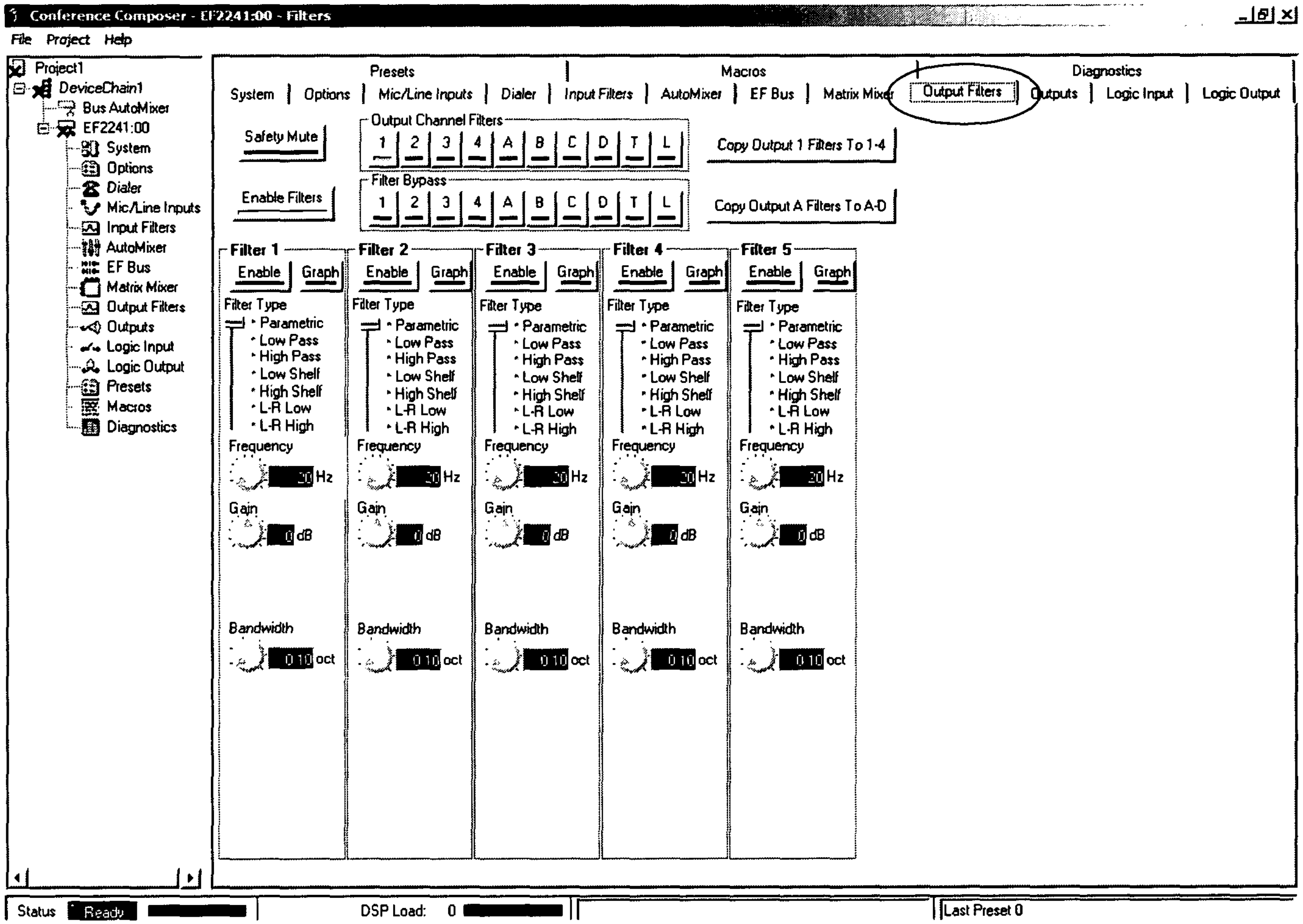
DSP Load: 0

Figure 10D



				Amplifier L	Amplifier R	-	-	Recording	-	-	-	To Telco	-	Bus Phones	Bus Mics	Bus Mono	Bus Stereo L	Bus Stereo R	Reference 1	Reference 2	
		IN	FDR	1	2	3	4	A	B	C	D	T	L	P	W	X	Y	Z	R1	R2	Mixer
	OUT			0	0	0	0	0	0	0	0	0	0								
	NOM			On	On	On	On	On	On	On	On	On	On								
Table Mic 1	1	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Table Mic 2	2	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Table Mic 3	3	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
-	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
-	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
-	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
-	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
-	D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
From Telco	T	0	0	-3	-3	0	0	0	0	0	0		0	0	0	0	0	0	0	0	
SubMix Phones	PM0			-3	-3	0	0	0	0	0	0	0	0		0	0	0	0	0	0	
-	PM1			0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	
SubMix Mics	WM0			0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	
-	WM1			0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	
-	WM2			0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	
SubMix Mono	XM0			-3	-3	0	0	0	0	0	0	0	0	0	0		0	0	0	0	
-	XM1			0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	
-	XM2			0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	
SubMix Stereo L	YM0			0	0	0	0	-3	0	0	0	-3	0	0	0	0		0	-3	0	
-	YM1			0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	
-	YM2			0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	
SubMix Stereo R	ZM0			0	0	0	0	-3	0	0	0	-3	0	0	0	0	0		-3	0	
-	ZM1			0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	
-	ZM2			0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	
Signal Generator	SG	-40		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Figure 10E



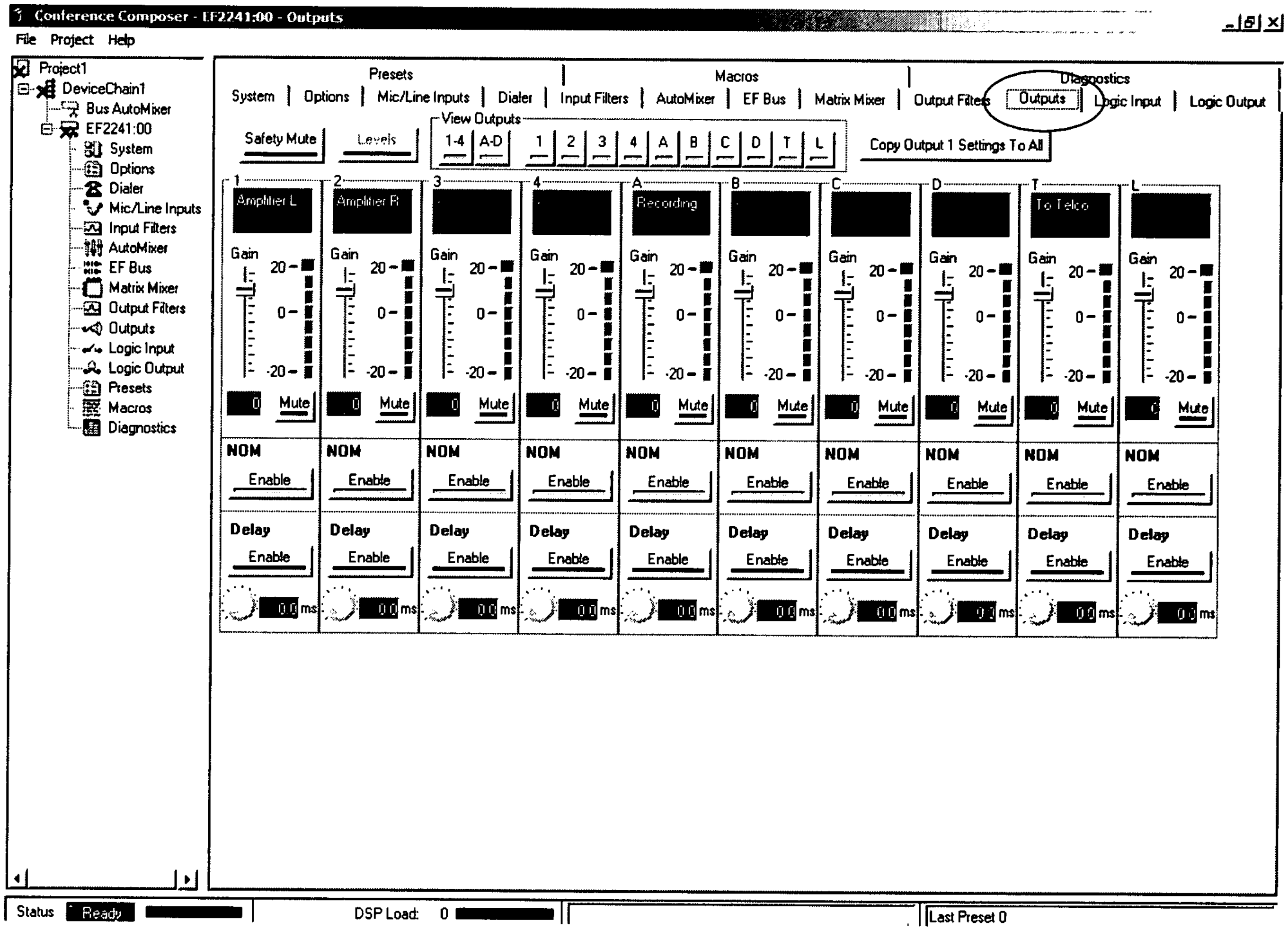

Conference Composer - EF2241:00 - Outputs
File
Project
Help
Project1
DeviceChain1
Bus AutoMixer
EF2241:00
System
Options
Dialer
Mic/Line Inputs
Input Filters
AutoMixer
EF Bus
Matrix Mixer
Output Filters
Outputs
Logic Input
Logic Output
Presets
Macros
Diagnostics
Presets
Macros
Diagnostics
System
Options
Mic/Line Inputs
Dialer
Input Filters
AutoMixer
EF Bus
Matrix Mixer
Output Filters
Outputs
Logic Input
Logic Output
Safety Mute
Levels
View Outputs
1-4
A-D
1
2
3
4
A
B
C
D
T
L
Copy Output 1 Settings To All
1
2
3
4
A
B
C
D
T
L
Amplifier L
Amplifier R
Recording
To Telco
Gain
20
0
-20
0
Mute
NOM
Enable
Delay
Enable
0.0
ms
Status
Ready
DSP Load:
0
Last Preset 0

Figure 10G